

REMARKS

The above application has been carefully reviewed in view of the Office Action of August 7, 2003. The Office Action withdrew claims 19-27 from further consideration. The Abstract was objected to for inclusion of the word "disposed." Claims 1, 3, 6, 14 and 28-30 were rejected as being anticipated by Yasuhara Patent No. 4,158,311. Claims 2, 4, 5, 7-13 and 15-18 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form. Reconsideration of this application in view of the amendments above and the remarks which follow is respectfully requested.

The Abstract has been amended above to delete the word "disposed" and to insert the word "located." A substitute Abstract is attached hereto. It is respectfully submitted that the objection to the Abstract is satisfied.

Independent claim 1 was rejected as being anticipated by Yasuhara. The Office Action states that in Yasuhara the first body member 2 is formed from a first material having a first coefficient of thermal expansion, and the diaphragm 8 is formed from a second material having a second coefficient of thermal expansion, wherein the first coefficient of thermal expansion is not greater than the second coefficient of thermal expansion by more than approximately 0.0000015 inch/inch/°F as set forth at column 2, lines 6-15 of Yasuhara. However, at column 2, line 6-15, Yasuhara states that the thermal expansion coefficient of the housings 2 and 3 is 17×10^{-6} to 18×10^{-6} , and the thermal expansion coefficient of the supporting plates 15 and 16 and bolts 17 is 10×10^{-6} to 11×10^{-6} . Thus the minimum difference in these coefficients of thermal expansion is the difference between 17×10^{-6} and 11×10^{-6} which equals 6×10^{-6} (0.000006). Claim 1 requires a maximum difference in the coefficients of expansion of 1.5×10^{-6} (0.0000015). Thus the difference in coefficients of expansion in Yasuhara is four times greater than the maximum difference allowed in claim 1.

In addition, the coefficients of thermal expansion provided in Yasuhara are for the housings 2 and 3, supporting plates 15 and 16, and bolts 17. A coefficient of expansion does not appear to be disclosed for the diaphragm 8. Independent claim 1 requires that the coefficient of thermal expansion of the diaphragm is not less than the coefficient of expansion of the body member by more than approximately 1.5×10^{-6} inch/inch/°F. There is no such disclosure in regard to the thermal coefficient of expansion of the diaphragm 8 in Yasuhara.

It is therefore respectfully submitted that Yasuhara does not disclose all of the limitations of claim 1 and that Yasuhara does not anticipate claim 1. Claims 2-13 depend from claim 1 and are submitted to be allowable with claim 1.

Independent claim 14 was rejected as being anticipated by Yasuhara. The Office Action states that the first body member 24 and second body member 25, as set forth at column 3, lines 11-18 in Yasuhara, are formed from a ferromagnetic material 6, 7 such that the first and second body members shield the diaphragm 23 from magnetic fields which may otherwise cause movement of the diaphragm 23 resulting in an inaccurate measurement of fluid pressure applied to the diaphragm 23. This portion of Yasuhara indicates that first and second insulating materials 4 and 5 are filled in the spaces of the housings 24 and 25, and that the inner surfaces of the insulations are spherically concave and are provided with metal foils 6 and 7 to function as capacitor plates. It is respectfully submitted that there is no disclosure in this portion of Yasuhara indicating that the first and second body members of the pressure sensor are formed from a ferromagnetic material such that the first and second body members shield the diaphragm from magnetic fields, as is required in independent claim 14. It is therefore respectfully submitted that independent claim 14 is not anticipated by Yasuhara. Claims 15-18 depend from independent claim 14 and are respectfully submitted to be in condition for allowance with claim 14.

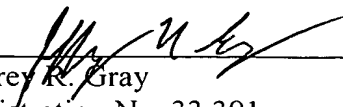
Independent claim 28 and its dependent claims 29 and 30 were rejected as being anticipated by Yasuhara. Claim 29 has been cancelled and the limitations from claim 29 have been inserted into claim 28. Claim 28 as amended now requires that the flexible metal diaphragm that is disposed between the first and second body members be in an annealed condition and formed from a precipitation hardening material. Claim 30 has been amended to clarify that the diaphragm is heat treated to approximately 900°F after the diaphragm is disposed between the first and second body members.

Thus in claim 28, the first and second body members have been heat treated to greater than 900°F, while the diaphragm is in an annealed condition and formed from a precipitation hardening material. As discussed at column 3, line 65 of Yasuhara, the diaphragm in Yasuhara is made of the precipitation hardening metal and is fixed to the first and second housings 24 and 25, and thereafter the entire assembly is subjected to heat treatment. This differs from claim 28 which requires that the first and second body members initially be subjected to heat treatment and then the annealed diaphragm (that is not yet heat treated) is disposed between the first and second body members. This is disclosed at page 13, line 16, of the present application. It is only after this assembly that the diaphragm is heat treated to approximately 900°F as called for in claim 30. The pressure sensor of claim 28 which includes heat treated first and second body members, and an annealed diaphragm, is not disclosed in Yasuhara. It is therefore respectfully submitted that independent claim 28 is allowable over Yasuhara. Claim 30 depends from claim 28 and is therefore respectfully submitted to be also in condition for allowance.

It is respectfully submitted that claims 1-18, 28 and 30 are allowable over the cited art. Claims 19-27 have been withdrawn from consideration. Claim 29 has been cancelled. Allowance of claims 1-18, 28 and 30 is respectfully requested.

Respectfully submitted,

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